



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/817,611

04/02/2004

Sheng Sun

A7188/T47800

2449

57385

7590

09/04/2008

TOWNSEND AND TOWNSEND AND CREW LLP / AMAT
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

BASHORE, ALAIN L

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

09/04/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/817,611	Applicant(s) SUN ET AL.	
	Examiner Alain L. Bashore	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 15-24, 28, 29 and 33-43 is/are pending in the application.
- 4a) Of the above claim(s) 34-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 15-24, 28, 29, 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The applied reference below to M'Saad has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing

Art Unit: 1792

that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

3. Claims 1-3, 6-8, 15-22, 28-29, 33 are rejected under 35 U.S.C. 103(a) as being obvious over M'Saad in view of Yamazaki et al.

M'Saad discloses a method for processing a film over a substrate in a process chamber (abstract). flowing a process gas (claim 2) suitable for processing the film over-the substrate (claim 2) into the process chamber (13, fig. 4A) in accordance with a predetermined algorithm (par. 52, line 6) specifying process conditions (par. 52, line 13); monitoring a parameter (par. 59, gas flow rates of reactive gases) during processing of the film (implicit) over a thickness greater than 3 micrometers (implicit, since waveguide thickness is >10 micrometers, par. 26); and changing the process conditions (par. 48 and 53) in accordance with a correlation (implicit; refractive index dependent on dopant gas flow rates, par. 83); process conditions need to be adjusted to achieve desired RI, par. 84-85, claim 20) among a value of the parameter (gas flow rate), an optical property of the film (refractive index, fig.7, 8;) and the process conditions (par. 52, 53). Annealing is also disclosed (par. 0025).

M'Saad does not disclose the changing of the process conditions to comprise:

increasing, discretely, an RF source power; or,

increasing an RF source power, continuously, for maintaining the plasma.

Yamazaki et al teaches increasing, discreetly and continuously, an RF source power for maintaining the plasma (para 0020-0021).

It would have been obvious to one with ordinary skill in the art to include the changing of the process conditions comprising increasing, discreetly, an RF source power; or, increasing an RF source power, continuously, for maintaining the plasma because Yamazaki et al teaches undesirable effects during process (para 0023-0024).

The term "processing" as claimed by applicant is or purpose of this examination to encompass all aspects of a film processing including pre-film formation.

Regarding claims 15-16, it would have been obvious to one with ordinary skill in the art to include these recitations because M'Saad teaches upper limits to process conditions that effect optical properties which also have upper limits known in the art (para 0084-0085).

4. Claims 4-5, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over M'Saad in view of Yamazaki et al as applied to claims above, and further in view of Chouinard.

M'Saad in view of Yamazaki et al do not disclose vertical and horizontal profile optimizations.

Chouinard et al discloses vertical and horizontal profile for waveguides (col 26, lines 55-60) .

It would have been obvious to one with ordinary skill in the art to include the recitations of claims 4-5, 23-24 because Chouinard et al teaches disclose vertical and horizontal profile as important regarding waveguide operation.

5. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over M'Saad in view of Yamazaki et al as applied to claims above, and further in view of Nikoonahad et al.

M'Saad in view of Yamazaki et al do not disclose reflectometry or ellipsometry measurements as the parameter.

Nikoonahad et al discloses reflectometry or ellipsometry measurements as parameters important (col 5, lines 20-44).

It would have been obvious to one with ordinary skill in the art to include disclose reflectometry or ellipsometry measurements as the parameter because Nikoonahad et al teaches depth penetration as important for detection of defects (col 5, lines 20-25).

It would have been obvious to one with ordinary skill in the art to include the recitations of claims 15-16 because Nikoonahad et al teaches design fabrication

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over M'Saad in view of Yamazaki et al as applied to claims above, and further in view of Breiner et al.

Art Unit: 1792

M'Saad in view of Yamazaki et al do not disclose stress uniformity.

Breiner et al teaches stress uniformity (para 0059).

It would have been obvious to one with ordinary skill in the art to include stress uniformity because Breiner et al teaches undesirability of such (para 0059).

Response to Arguments

7. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alain L. Bashore whose telephone number is 571-272-6739. The examiner can normally be reached on about 7:30 am to 5:00 pm (Mon. thru Thurs.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1792

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alain L. Bashore/
Primary Examiner, Art Unit 1792